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## (54) Method and apparatus for managing attraction admission

(57) The invention is a method and system for managing admission to an attraction. In one or more embodiments, the system comprises a first queue by which customers may access the attraction by waiting in line and a second queue by which customers may access the attraction in a manner which avoids the first queue. The system includes a first validator for validating an entitlement of a customer to receive an assigned time in the future for accessing the attraction via the second queue, a media distributor for distributing a media to an entitled customer, the media including the assigned time at which the entitled customer is entitled to access the attraction in the future, and a second validator for validating the entitled customer access to the attraction at the time provided on the media. In accordance with a method of the invention, a customer may access an attraction in a manner which avoids standing in a first waiting line by verifying entitlement to utilize a second queue, obtaining a pass entitling the customer to access the attraction at a future time, and returning to the attraction at the future time and gaining access with the pass. In this method, the customer may leave the vicinity of the attraction between when the pass is issued and the future time at which the customer is entitled to access to the attraction.

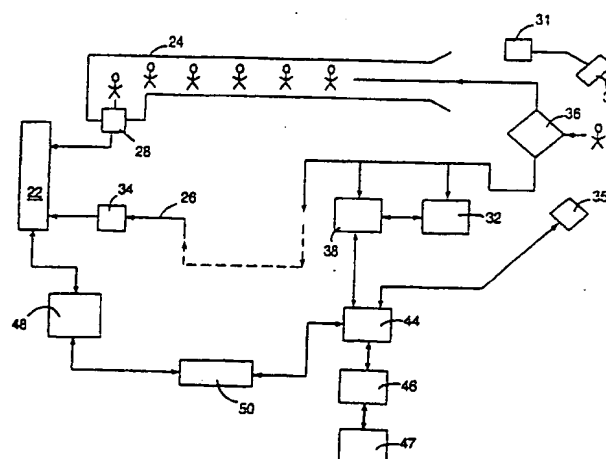


Fig. 2

customer does not obtain a ticket, then the customer is not permitted to access an attraction.

[0011] Another attempt to eliminate or reduce the need to stand in line is described in U.S. Patent 5,502,806 to Mahoney (the Mahoney patent or the '806 patent). The Mahoney patent describes a waiting line management system where a customer is issued a card or electronic ID device and by which the customer is permitted to use a plurality of computer access terminals. The access terminals are located, for example, in an amusement park. A customer using the card at the access terminal is advised of time slot windows available for a number of attractions and performances. The customer chooses one or more time slots for one or more attractions and thereby is able to pre-schedule the use of attractions.

[0012] A problem with the Mahoney scheme is that it allows customers to reserve the right to use a number of attractions, potentially preventing others from using the attractions. Another problem is that by allowing the customer to select a time slot, the Mahoney system lacks responsiveness to changing ride conditions and performance data. In addition, the slots themselves are determined by a pre-established allotment. Such advance assignment of time slots suffers from the same disadvantages as the above-described first known scheme in that there is no dynamic changing of time slot allocation based on actual attraction conditions. This condition could result in customers being required to stand in line if conditions have slowed down, eliminating the very benefit the system is intended to provide. Mahoney suggests that if such a situation occurs, then customers who do not have passes will be required to wait longer than customers that do have passes. However, such a solution still could require substantial wait time for customers with passes, and leads to unacceptable wait times for customers without passes. Another problem with permitting customers to select time slots is that all of the time slots may be selected for certain periods of the day, such as 2-5 p.m., while few or none of the slots may be selected for other periods of the day, such as 12-1 p.m. In this arrangement, the attraction may be underutilized during certain periods of time.

[0013] The Mahoney scheme manages slot times allocation based on a fixed capacity of an individual attraction. In actual practice, the capacity of an attraction may not be achievable due to a variety of factors, including number of customers, the demographics of the customers, attraction performance, the number of customer vehicles associated with the ride which are in service over time, the number of staff members available to operate the ride, safety factors, weather, etc. For example, the total number of customers in a park who may even desire to access any attraction may be much less at one time of day (such as at opening) than another time of day (such as mid-day). In addition, the capacity of an attraction may change due to a variety of circumstances. A ride may be taken out of service for a period of time or one or more "cars" or associated customer vehicles may be removed from the ride, lessening the capacity. The number of staff available to operate the ride may fluctuate during the day. If a fewer number of staff members are available, such as at a shift change, the number of patrons which may be loaded into each customer car or the number of cars which may be loaded may be reduced. When slow downs occur and customers with passes must wait in line, the time slots reserved by those customers for other attractions may expire. This not only frustrates the customers with passes, but leads to potentially empty seats on other attractions.

[0014] An improved method and apparatus for managing access to an attraction is desired.

#### SUMMARY OF THE INVENTION

[0015] The invention is a system and method for managing admission to an attraction that provides a customer with a choice of standing in line for the attraction or having a spot reserved for admission to the attraction at a later time without standing in line. The invention also provides an improved method and apparatus for managing admission to an attraction that can be constantly adjusted to account for the dynamic real time capacity of the attraction. The invention also provides a method and apparatus for managing admission to an attraction that can prevent customers from acquiring multiple reservations for the same attraction.

[0016] In one or more embodiments, the system provides two access points or queues at an attraction. A first queue is a traditional "wait in line" queue where customers line up for the next available chance to use the attraction. A second queue provides a customer with access to the attraction which avoids the traditional, first queue.

[0017] The system includes a first validator for validating the right of a customer to receive an assigned future time to access the second queue. In one embodiment, the system also includes a media distributor for distributing an entitlement in the form of a pass to an entitled customer. The pass provides a time or time range assigned by the system during which the entitled customer is entitled to access the attraction in the future via the second queue. The system includes a second validator for validating that the customer is entitled to access to the attraction via the second queue at the assigned time. In one embodiment, the pass issued to the customer establishes the entitlement of the customer to access the attraction via the second queue by the second validator.

[0018] In accordance with an embodiment of a method of the invention, a customer may access an attraction in a manner which avoids standing in a first waiting line by verifying entitlement to utilize a second queue, being assigned a future time for accessing the attraction via the second queue, returning to the attraction at the future time and validating the entitlement of the customer to gain access at the assigned time. In one embodiment, a customer is issued a pass

for a specific attraction;

FIGURE 8 illustrates an embodiment of a viewable screen displaying information associated with a master server of a system of an embodiment of the invention;

FIGURE 9 is a flow diagram illustrating an embodiment of a method by which information is fed from a master server to a controller of an embodiment of the invention;

FIGURES 10A-10C show a flow diagram illustrating a method of the invention by which information is fed from a controller to a master server of an embodiment of the invention;

FIGURE 11 illustrates a system in accordance with another embodiment of the invention; and

FIGURE 12 is a flow diagram illustrating an embodiment of a method of the invention.

FIGURE 13 illustrates a sample printed pass allowing for patron entry into a designated ride during a particular time range and includes targeted advertising messages.

#### DETAILED DESCRIPTION OF THE INVENTION

[0026] In the following description, numerous specific details are set forth in order to provide a more thorough description of the present invention. It will be apparent, however, to one skilled in the art, that the present invention may be practiced without these specific details. In some instances, well-known features may have not been described in detail so as not to obscure the invention.

[0027] One or more embodiments of the invention comprise at least one method and system for managing admission to an attraction. The system is particularly applicable for use in an environment where the number of customers which desire access to an attraction is greater, at one or more times, than the capacity of the attraction. Such a condition may be referred to as a condition of insufficient capacity. By insufficient capacity, it is meant that fewer customers can be accommodated at/by the attraction than wish to be accommodated at a particular time or over a period of time. This condition may arise by an imposed limitation, such as where it is desired to limit the number of persons in a particular area at a given time. Such may be for safety or a variety of other purposes. This condition may also arise due to physical limitations, such as the number of seats on a particular ride and the cycle time of the ride.

[0028] Figure 1 is an illustration of one embodiment of the present invention. The system is for use in controlling admission or entry to an attraction 22 (note, as used herein, the term "attraction" is meant to comprise any location or presentation to which one or more customers wish to gain access. The attraction may comprise a location at which a service is provided, such as a ride, stage or other show, theater, parade, restaurant or other food service, merchandise location, transportation or the like. The attraction may also comprise a geographic location, such as a natural wonder, art museum or the like. Thus, while the system has particular applicability to and is described herein for use in controlling access to a ride-type attraction, the system may be used in a wide variety of other environments where it is desired to avoid lines).

[0029] In one or more embodiments, the system includes a first queue 24 by which customers gain access to the attraction 22 by waiting in a line, much as has been done in the prior art. In other words, the customers in the first queue 24 have an order in line based on a time at which they enter the queue, and are able to utilize the attraction in that order when a space or capability is available. In one or more embodiments, the queue 24 includes a turnstile 28 (or similar device for controlling access) positioned at an entrance of the attraction 22. The queue 24 may also include ropes, fences 30 or the like for defining a space in which the customers line up.

[0030] In one or more embodiments, the customers in the first queue 24 are permitted to access the attraction when there is an open spot not filled by the customers accessing the attraction via the second queue 26. As described in more detail below, the number of customers which are permitted to access the attraction via the second queue 26 may be adjusted to provide a certain number of open spots for customers in the first queue 24. For example, 80% of the available spots for the attraction may be dedicated to and filled by customers from the second queue 26, while the remaining 20% are filled by customers from the first queue 24. In addition, if one or more of the spots dedicated to the customers of the second queue 26 are not filled, such as if one or more customers who obtain passes for accessing the second queue 26 do not return to access the attraction, then these spots may be filled by customers in the first queue 24. As described in more detail below, this arrangement permits the attraction to operate at all times at optimum capacity.

[0031] The system of the invention also includes a second queue 26 by which customers gain access to the attraction 22 without waiting in a line and thereby avoid the first queue 24. In one or more embodiments of the system, the system includes at least one validator for validating the right of a customer to receive an assigned time to access the attraction via the second queue.

[0032] In the embodiment illustrated in Figure 1, the system includes a first validator 32 validating the right of a customer to receive an assigned future time to utilize the second queue 26, and a second validator 34 for permitting the customer to access the attraction 22 at a future time via the second queue 26. In this manner, the customer can avoid the first queue 24.

[0033] In operation, a customer utilizes the first validator 32 to obtain an assigned time in the future for accessing

accept issued tokens, identify one or more biometric identifiers of a customer such as a radio-frequency identification (RFID); retina, voice, thermal, finger or hand geometry signature; or a visual identification of the customer or the like.

[0044] In one or more embodiments, if the first validator 32 establishes the right of the customer to an assigned time in the future for accessing the attraction via the second queue 26, then the media distributor 38 distributes a pass to a customer which the customer may utilize to access the attraction via the second queue 26. In one embodiment, the media distributor 38 comprises a printer which prints a paper pass or similar element. The media distributor 38 may issue one or more of a wide variety of media as passes, such as magnetic-stripe encoded or "smart" cards, punch-type cards, coded tokens, biometric identifiers such as those set forth above and the like.

[0045] In one embodiment, the pass which is distributed to each customer by the media distributor 38 is arranged to permit the customer to gain access to the attraction 22 at a time in the future. The particular time, as described below, may vary upon a wide variety of circumstances. In one or more embodiments, the time comprises an assigned access time or time range which is printed on the pass which is issued to an entitled customer. (In the examples below, the pass is referred to as having a "time" associated with it. It will be understood that this contemplates both a specific time and/or a time range, time period, or time window).

[0046] As described above, the first validator 32 and the media distributor 38 may be located adjacent to the attraction and/or remote therefrom. In the event the first validator 32 and media distributor 38 are located near the attraction, after obtaining a pass or the like, the customer may leave the area of the attraction 22 and need not return to the attraction 22 until the time provided on the pass. In the event the customer obtains a pass from a remote media distributor 38, the customer simply continues about their activities until it is necessary to travel to the vicinity of the attraction at the assigned time. As described in more detail below, the right of a customer to obtain passes may be a value added feature for which the customer pays additional monies (such as at the same time as purchasing a main ticket).

[0047] In one or more embodiments, the first validator 32 may be integral with a main ticket issuer/validator and second queue access passes may be issued at the same time or as part of a main ticket. For example, a customer entering a theme park may be permitted, at the time they present or purchase their ticket, to obtain one or more passes providing future times assigned by the system. This permits a customer to plan or schedule their day ahead of time. In this arrangement, the ticket which the customer uses to access the theme park may be encoded and/or printed with access time information for permitting the customer to access one or more attractions at future times, avoiding the need to issue separate passes.

[0048] In one or more embodiments, the system and method for permitting access to the attraction 22 includes a second validator 42 for establishing the right of a customer to access the attraction via the second queue 26 at assigned time. In one embodiment, the second validator 42 validates the media or pass issued by the media distributor 38 and held by a customer. In one or more embodiments, the second validator 42 comprises a human attendant which reads information printed on the pass and verifies the information. The attendant may verify the printed assigned time or time range against the current time, a date of the pass against a current date, and the attraction for which the pass is issued.

[0049] Alternatively, the second validator 42 may comprise a card reader or other device for confirming the entitlement of a customer to access the attraction 22 via the second queue 26. For example, the second validator 42 may be arranged to verify data associated with the element issued by the media distributor 38, such as a bar code.

[0050] In one or more embodiments of the invention, the pass issued to a customer may be issued only for reference by the customer for knowing and remembering the assigned time or range of time, and the second validator 34 may be configured to verify entitlement of the customer in a manner independent of the pass. For example, a customer may establish entitlement to a pass with a finger print at the first validator 32. The pass provides written indication of the assigned time to the customer. When the customer accesses the second queue 26, the customer may be required to establish validation at the second validator 34 with a fingerprint again. In this arrangement, the second validator 34 determines that the customer is entitled to access the attraction by establishing that the identify of the customer with the fingerprint and determining if the time the customer is accessing the second queue 26 is at the time/in the range of time which was assigned to the customer. It may be appreciated that the second validator 34 may be configured to establish validation in one or more of the variety of manners described above with respect to the first validator 32. It should be appreciated that customers may not be issued passes at all.

[0051] In accordance with one or more embodiments of the invention, one or more schemes are provided for determining the access time which is associated with each media which is issued by the media distributor 38. In one or more embodiments of the invention, a time at which a customer is permitted to gain access to the attraction 22 via the second queue 26 is dependent upon one or more of a variety of factors, including, but not limited to, the following: the capacity of the attraction, the capacity of the attraction which is allocated to customers accessing through the second queue 26, the total number of customers who may wish to access the attraction 22, the current and future staffing of the attraction, the demographics of the customers, the time of day and the day of the week.

[0052] In one or more embodiments, the system includes a controller 44. As illustrated, the controller 44 is arranged to control the media distributor 38. The controller 44 may also be arranged to control other aspects of the system, such as the first validator 40. In one or more embodiments, the controller 44 receives attraction capacity and/or time informa-

Example:

[0062]

5 If  $g = 2,000$ ,  $x = 60$ ,  $z = .8$ ,  $p = 5$ , then

$$((2000 * .8)^{1/60} * 5 = 133.33$$

Rounded down to 133.

10

## PROCESSES

The system has following processes:

### 15 5-MINUTE LOAD PROCESS

[0063] Every 5 minutes, a main systems process on a Bridge server will get the Master Controller data (as used herein and in the Figures, "master controller" includes controller 44 as described above and a master controller 244 as described below), call the stored procedure "put\_me\_data" on the Park server (the Park server may comprise a server such as server 104 described below with reference to Figure 3), and pass a series of values to the stored procedure. The stored procedure will insert these values into the synonymed "vq\_contr\_feed\_info" table, which points back up to an attraction data server (such as the master server 102 as illustrated in Figure 4 and referred to in Tables I to IX as "OPSheet" or local server 48), and update the local Park server table "vq\_last\_feed\_info".

### 25 10-MINUTE SEND PROCESS

[0064] Every 5-10 minutes, after calculations have been performed to determine the correct dispense rate, a row will be inserted into the vq\_opsheet\_feed table location on the attraction data server. This insert will trigger a stored procedure, which will activate a C routine. The C routine will build two files. The first file will contain the attraction identifier; the second file will contain k-shell script commands. The C routine will execute the k-shell file, and the k-shell file will ftp the first file to the Bridge server location.

[0065] On the Bridge server, another mechanism will run every minute looking for the file sent by the process described above. If the file is found, a message pulse will be sent via the Windows NT operating system to activate the main systems process.

[0066] The main systems process will read the file to get the attraction ID. Using this attraction ID, the main systems process will call the stored procedure "get\_me\_data", located on the attraction data server. This stored procedure will return the values from the "vq\_opsheet\_feed\_info" table for the attraction in question, and then indicate that this data has been processed.

### 40 ABUSE CHECK

[0067] When a card is read through the magnetic reader, a main systems process will trap the information, attach the attraction, and call a stored procedure called "abuse\_check", which is located on the Park server. This stored procedure will determine whether or not a duplicate ticket exists for abuse purposes. It will also determine whether or not the close time has been reached. Based on several checks, either a 0 (successful), 1 (abuse), or 2 (past the close time) will be returned by the stored procedure to the main systems process. The main systems process will then determine how to proceed with printing a reservation ticket.

### CLEARING ABUSE CHECK DATA

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[0068] Each morning at 3:00 AM, a process called "cleanab.sh" will run. This is a C program that will delete all the abuse check data accumulated for the day.

### SYNCHRONIZATION OF ATTRACTION DATA SERVER TO THE PARK SERVERS

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[0069] Each time an attraction is created, updated, or deleted in the attraction data server, a trigger mechanism will be activated. The trigger mechanism will take the changes on the attraction data server and pass them to the correct Park server attraction table. This will be done via a stored procedure called "synclocs". This stored procedure will deter-

sive pass. In the event the algorithm processor 50 indicates that no more access times are available, the controller 44 may instruct the media distributor 38 and/or first validator 40 to print or display a message that no more customers are being provided access to the attraction 22 via the second queue 26.

[0085] The algorithm processor 50 may be arranged to provide for multiples of the same access time. For example, if the capacity of the attraction 22 permits, two or more passes may be issued with the same access time. On the other hand, if the capacity of the attraction 22 is limited, the access times may be spaced apart in time.

[0086] As described above, certain information regarding the system may be provided for viewing on the display screen 47. The display screen 47 and associated keypad 46 may comprise a user interface for the system for obtaining information from and inputting information to, the system. Figure 5 illustrates an information screen illustrating the current "downtime" of an attraction. A user of the system may input estimated downtime information to the system using the keypad 46. This information may be used by the algorithm processor 50 to adjust the times which are being calculated for assignment to customers by the input time.

[0087] Figures 6A-6C illustrate screens which permit a user to view current system settings and adjust those settings. For example, a user of the system may determine from such a screen that the current pass dispense rates for the second queue 26 are higher than desired, and input a lower percentage allocation value to the system for reducing the number of passes/entitlement issued to customers. The user may also set an expected level of "no shows" or the percentage of customers who obtain passes for accessing the second queue but do not use them.

[0088] Figure 7 illustrates a screen which enables a user to establish a variety of settings for a specific attraction. For example, using this displayed information a user can determine whether or not the system is configured to permit a customer to obtain multiple passes. If not (i.e. "abuse check" is "on"), the user may utilize the keypad 44 to change this setting, if desired. The user may also be permitted to view and adjust a wide variety of other information such as the time at which the ride will shut down and thus the last possible assigned time.

[0089] Figure 8 illustrates a screen displaying information associated with the master server 102. As illustrated, using information provided to the master server 102, a user may obtain information regarding any one or more attractions associated with the system. The user may be permitted to obtain and revise information with any particular attraction. This arrangement allows a user to avoid the need to travel to each attraction to view information, but instead obtain and edit information from a central location.

[0090] The personnel which are permitted to access the system, including the viewing of information and inputting of information, may be limited. For example, a card-reader or similar device may be associated with the keypad 46 for reading an employee I.D. card and verifying that the employee is permitted to access the system.

[0091] Those of skill in the art will appreciate that there are numerous configurations of hardware and/or software for implementing the invention. For example, the controller 44, keypad 46 and display 47 may comprise components of a general purpose computer. The algorithm processor 50 may comprise hardware, or may comprise software executed in a processing environment, such as a computer.

[0092] Although the above-described system has been described as and is particularly applicable in managing admission to a single attraction, such a system can be adapted to manage admission to multiple attractions. In one or more embodiments, a first system which is associated with a first attraction 22 is linked to a second system associated with second attraction and/or additional attractions. Figure 3 illustrates in greater detail such a master system 100 in accordance with one embodiment of the invention.

[0093] The master system 100 includes a master server 102 which is linked to a local server 48 of a local system associated with a particular attraction. In addition, a main server 104 is linked to each local server 48. For simplicity, Figure 3 illustrates only one such local system in detail, and illustrates only the local servers of three additional local systems.

[0094] In the embodiment illustrated, the master server 102 serves the function of the algorithm processor 50 of the system described above. In this arrangement, the algorithm processor 50 associated with each system is omitted and the master server 102 serves the functions of each individual algorithm processor. The master server 102 sends calculated access time information for each attraction 22 to its respective local server 48, which then provides the data to the media distributor 38.

[0095] The main server 104 is arranged to permit communication to and between each of the local servers 48. For example, in one or more embodiments, when a customer seeks to obtain an admission pass for an attraction, the local server 48 associated with that attraction sends a request to the main server 104 to determine if the customer has already obtained an admission pass for another attraction. If so, the local server 48 can instruct the controller 44 (and first validator 40) to prevent the media distributor 38 from issuing an admission pass. When the customer is not prevented from obtaining an admission media, then the local server 48 may be arranged to send data to the main server 104 regarding the customer, the issued time and attraction so that the customer can be prevented from accessing another attraction at the same time or before the currently issued pass has been used or expired.

[0096] In one or more embodiments, the main server 104 stores or is linked to a database having information regarding customers entitled to access the second queue 26 of each local system to access an attraction. For example,

outstanding entitlements/passes.

[0109] In one embodiment, such as in the system illustrated in Figure 2, if the ticket is verified, the first validator 40 sends a signal of such to the media distributor 38. The media distributor 38 then issues a pass to the customer. The pass includes an assigned access time at which the customer is entitled to return to the attraction 22 in the future and access the attraction 22 through the second queue 26.

[0110] The customer may then leave the area of the attraction 22. During this time, the customer may shop, eat or engage in a wide variety of other activities.

[0111] At the appointed time, the customer returns to the attraction 22 and seeks access to the attraction via the second queue 26. The customer establishes entitlement to access the attraction via the second validator 42. In the embodiment where the customer is provided with a pass which provides access, the customer presents the issued pass to a person who verifies the current time and the time printed on the pass, the date of the pass and the attraction for which the pass provides access. If validated, then the customer is permitted to access the attraction 22. As provided above, the customer may establish entitlement to access the attraction in accordance with other methods, such as by scanning a fingerprint again.

[0112] In one or more embodiments, the customers gaining access to the attraction through the first and second queues may be separated. For example, for a ride having four cars, the first two cars may be filled with customers from the first queue 24 and the second two cars filled with customers from the second queue 26. In one or more embodiments, the customers gaining access to the attraction 22 are integrated in accordance with the allocated capacity to the first and second queue customers.

[0113] In one or more embodiments, one or more customers may be permitted to access an attraction via the second queue 26 apart from the standard method of establishing entitlement at the first validator 40 and then returning to the second queue 26 of the attraction at the assigned time. For example, one or more passes may be issued to a number of customers which include pre-assigned times. One or more customers might, for example, be issued passes on the same day or days or weeks before the assigned date of access. A customer arranging a trip to a theme park may be permitted to purchase passes. In one or more embodiments, these assigned "spots" are accounted for by the system when determining other passes to issue to those accessing the attraction with the first validator.

[0114] In one or more embodiments, one or more customers may be permitted to access an attraction via the second queue 26 or even a third queue without a pass. For example, special VIP, disabled or other customers may be permitted to access the attraction via the second queue 26 or a third queue which permits the customer to access the attraction at any time.

[0115] As described above, in one or more embodiments of the system and method a customer is prevented from obtaining more than one entitlement or pass for accessing an attraction at a single time. In another arrangement, some customers may be permitted to obtain multiple passes. In one embodiment, the system may be arranged to permit customers to obtain multiple passes at some times and not at others. For example, if the wait time for accessing one or two attractions is particularly long (whether by the first or second queue 24,26) the system may be arranged to permit customers to obtain passes for different attractions so that the customer avoids the need to access one attraction before obtaining a pass for accessing another attraction.

[0116] Advantageously, the method and system of the present invention permits one or more customers to gain access to an attraction without having to wait in a standard line to access the attraction. This permits the customer to engage in other activities instead of waiting in line. Such activities may comprise shopping or eating.

[0117] In one or more embodiments, the method and system advantageously permits "real-time" adjustment of the flow of customers to the attraction 22 via the first and second queues. This is advantageous since it permits optimization of the capacity of the attraction with the demand of customers. In the event the line of customers in the first queue 24 becomes excessively long, the system can provide for an adjustment in the number of customers permitted to access the attraction 22 via the second queue 26 and thus reduce the wait time associated with the first queue. In addition, in the event the capacity of the attraction 22 suddenly decreases, the system can provide for an adjustment in the number of customers and/or access times via the second queue 26 to prevent a build up of customers accessing the attraction 22 via the first and/or second queues. In the event the capacity of the attraction 22 increases, the system can provide for an additional number of customers to access the attraction 22 via the second queue 26 and/or adjust the access times to permit more customers to access the attraction.

[0118] Referring to Figure 13, a sample pass 300 as generated by media distributor 32 is illustrated. Pass 300 contains various sections of text that can be varied from pass to pass and is selected by the system or system operator. An attraction identification 310 is provided to identify the particular ride or attraction that the patron has access too. A time section 320 identifies the particular time or time range that the patron can access the attraction without having to wait in the physical line or queue. As previously explained, the actual time or time range assigned to a given patron will be generated by the system based on various conditions. A promotional or advertising section 320 is provided and can include various messages that are generated by the system. The date 325 pass 300 was issued, along with the time 330 it was issued can also be printed. The arrangement, sizing, and presentation of the textual material can all be var-

that class requests pass 300, relevant messages could be printed such as where or when to meet the group. Of course, knowing who the patron is and if they belong to a specific group may also allow for customized advertising to be generated.

[0128] Targeted, patron (or group) specific messages can be printed on pass 300. All that is required is providing a way of identifying the patron to the system as pass 300 is requested. There are many way of accomplishing this within the scope of the present invention. As discussed, admission media could be provided when entering the park. Any number of other identifying products could be provided throughout the park. In addition, a patron can be asked to manually enter or otherwise provide identification information at the point pass 300 is obtained.

[0129] Pass 300, as described, can be printed with any number of and types of messages. Advertising, promotional, patron or group specific messages can be generated in various combinations. Of course, any material may be printed, whether categorized or not. Thus, "informational material", as used herein is meant to include any material that may be printed or otherwise added to pass 300, whether for purposes of advertising, promotion, communication, traffic management, information dissemination, or otherwise.

[0130] Of course, the foregoing description is that of one or more embodiments of the invention, and various changes and modifications may be made without departing from the spirit and scope of the invention, as defined by the claims.

[0131] The following tables I to IX illustrate table names/definitions and a data dictionary of terms for use in a system and method of the invention.

## TABLES

Table Name	Table Definition
contr_feed_info	Information about feed from Master Controller
opsheet_feed_info	Information about feed from OpSheet
vq_cle_forecast_info	Forecasted capacity limiting event (CLE) information, to forecast guest count
vq_disp_rate_log	Dispense rate log information. A row is inserted every time the dispense rate is calculated.
vq_error_log	Error log, for internal use only
vq_loc_daily_info	Location daily information, by location and date
vq_loc_port_info	Location-Port mapping table. To be updated by APES Admin only.
vq_loc_scenario	Location scenario override information for specific location, datetime and situation
vq_loc_schedule	Location calculation parameter schedule. Effective and expiration dates, along with schedule effective flag, specify whether to use schedule or default values.
vq_no_show_lookup	Lookup table for No Show factor, used in calculation of dispense rate. Defined for range of virtual queue wait time.
vq_scenario_info	Scenario setup information (Admin only)
vq_standby_wait	Standby wait information, for waitfree locations only

TABLE I



Column Table Name	Column Name	Column Datatype	Column Null Option	Column Comment	Column Is PK	Column Is FK
vq_contr_feed_info	printer_number	char(2)	NULL	Printer number for VQ	No	No
vq_contr_feed_info	reading_time	integer	NULL	PC business time when feed sent, 0 to 2400	No	No
vq_contr_feed_info	vq_curr_wait_time	integer	NULL	Current wait time in minutes (e.g. 130 minutes)	No	No
vq_contr_feed_info	vq_disp_time_int	smallint	NULL	Ticket dispense time interval	No	No
vq_contr_feed_info	vq_dispense_rate	integer	NULL	Ticket dispense rate	No	No
vq_contr_feed_info	vq_gst_win_minutes	integer	NULL	Guest window minutes (the difference between guest window start and end; e.g. 60 minutes)	No	No
vq_contr_feed_info	vq_guest_count	integer	NULL	VQ guest count (?)	No	No
vq_contr_feed_info	vq_loc_port_id	integer	NULL	Unique serial ID (generated by the system) that identifies the location/attraction	No	Yes
vq_contr_feed_info	vq_mc_processed	char(1)	NULL	Whether Master Controller information is processed by OpSheet (Y/N)	No	No
vq_contr_feed_info	vq_min_wait_time	smallint	NULL	Minimum wait time set for the attraction (e.g. 40 minutes)	No	No
vq_disp_rate_log	dis_reduction_fact	smallint	NULL	Factor by which distribution of ticket dispensing should be reduced during downtime	No	No
vq_disp_rate_log	dispense_rate	integer	NULL	Virtual queue ticket dispense rate	No	No
vq_disp_rate_log	forecast_gc	integer	NULL	Forecasted guest carried, used in calculations	No	No
vq_disp_rate_log	forecast_time_min	smallint	NULL	Time interval to forecast guest count	No	No
vq_disp_rate_log	last_update_time	datetime YEAR to FRACTION (5)	NOT NULL	Datetime when the record was last updated	No	No
vq_disp_rate_log	last_update_user	char(8)	NOT NULL	User ID that updated the record last	No	No
vq_disp_rate_log	location_id	integer	NULL	OpSheet location ID, from location_info	No	No
vq_disp_rate_log	noshow_factor_pcnt	smallint	NULL	Percent of people that do not show up for a given virtual wait time, applied in the calculations to adjust dispense rate	No	No

TABLE III

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Column Table Name	Column Name	Column Datatype	Column Null Option	Column Comment	Column Is PK	Column Is FK
vq_loc_daily_info	vq_loc_port_id	integer	NULL	Unique identifier for location	No	Yes
vq_loc_port_info	dis_reduction_fact	smallint	NULL	Factor by which distribution of ticket dispensing should be reduced during downtime	No	No
vq_loc_port_info	do_abuse_check	char	NULL	Whether abuse check should be performed or not	No	No
vq_loc_port_info	downtime_effective	char	NULL	Flag to indicate whether downtime is currently effective	No	No
vq_loc_port_info	forecast_time_min	integer	NULL	Guest count forecast time interval (usually 60 minutes)	No	No
vq_loc_port_info	ftp_arg1	char(10)	NULL	ftp user-id to connect to Bridge server	No	No
vq_loc_port_info	ftp_arg2	char(10)	NULL	ftp password to connect to Bridge server	No	No
vq_loc_port_info	ftp_script_name	varchar(50)	NULL	ftp script to trigger ftp data from Parks-APES server to Bridge server	No	No
vq_loc_port_info	last_update_time	datetime year to fraction(5)	NOT NULL	Datetime when the record was last updated	No	No
vq_loc_port_info	last_update_user	char(8)	NOT NULL	User ID that updated the record last	No	No
vq_loc_port_info	location_number	char(4)	NOT NULL	Location number (as used by IEs in OpSheet)	No	No
vq_loc_port_info	origin_id	integer	NOT NULL	Origin identifier of park, as in OpSheet	No	No
vq_loc_port_info	override_effective	char	NULL	Flag to indicate whether scenario override is effective	No	No
vq_loc_port_info	park_code	char(2)	NULL	Park code: AK, MK, EC, ST	No	No
vq_loc_port_info	percent_capacity	smallint	NULL	Percent of the location's total capacity for VQ (e.g. 80%)	No	No
vq_loc_port_info	schedule_effective	char	NULL	Flag to indicate whether scenario schedule is effective	No	No
vq_loc_port_info	server_name	varchar(30)	NOT NULL	Name of the Bridge server dedicated to this location/attraction	No	No
vq_loc_port_info	survey_time_min	integer	NULL	Survey time in minutes (same as forecasted time in minutes)	No	No

TABLE V

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Column Table Name	Column Name	Column Datatype	Column Null Option	Column Comment	Column is PK	Column is FK
vq_loc_scenario	percent_capacity	smallint	NULL	Percent of location's total capacity for VQ (e.g. 80%)	No	No
vq_loc_scenario	vq_disp_time_int	smallint	NULL	VQ ticket dispense time interval (5 minutes)	No	No
vq_loc_scenario	vq_dispense_rate	integer	NULL	Number of tickets to dispense in vq_disp_time_int	No	No
vq_loc_scenario	vq_loc_port_id	integer	NULL	Unique location identifier	No	Yes
vq_loc_scenario	vq_loc_scenario_id	serial	NOT NULL	Unique identifier (generated by the system) for location scenario information	Yes	No
vq_loc_scenario	vq_scenario_id	integer	NOT NULL	Unique scenario identifier	No	Yes
vq_loc_scenario	vq_scn_eff_date	date	NULL	Scenario effective date	No	No
vq_loc_scenario	vq_scn_eff_time	integer	NULL	Scenario effective time	No	No
vq_loc_schedule	effective_date	date	NULL	Schedule effective datetime	No	No
vq_loc_schedule	effective_time	datetime HOUR to MINUTE	NULL	Schedule effective time	No	No
vq_loc_schedule	expiration_date	date	NULL	Schedule expiration datetime	No	No
vq_loc_schedule	last_update_time	datetime year to fraction(5)	NOT NULL	Datetime when the record was last updated	No	No
vq_loc_schedule	last_update_user	char(8)	NOT NULL	User ID that updated the record last	No	No
vq_loc_schedule	percent_capacity	smallint	NULL	Percent capacity used for VQ guest count calculations	No	No
vq_loc_schedule	vq_close_time	datetime hour to minute	NULL	Actual close time of the attraction	No	No
vq_loc_schedule	vq_disp_time_int	smallint	NULL	VQ ticket dispense time interval (in minutes)	No	No
vq_loc_schedule	vq_dispense_rate	integer	NULL	VQ ticket dispense rate	No	No
vq_loc_schedule	vq_gst_win_min	integer	NULL	Guest window (in minutes)	No	No
vq_loc_schedule	vq_loc_port_id	integer	NOT NULL	Unique serial ID (generated by the system) that identifies the VQ attraction/park	No	Yes
vq_loc_schedule	vq_loc_schedule_id	serial	NOT NULL	Unique serial ID (generated by the system) that identifies the attraction schedule	Yes	No
vq_loc_schedule	vq_wait_time	integer	NULL	Current virtual queue wait time	No	No
vq_no_show_lookup	last_update_time	datetime year to fraction(5)	NOT NULL	Datetime when the record was last updated	No	No

TABLE VII

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Column Table Name	Column Name	Column Datatype	Column Null Option	Column Comment	Column is PK	Column is FK
vq_opsheet_feed	vq_loc_scenario_id	integer	NULL	Unique identifier (generated by the system) for location scenario information	No	Yes
vq_opsheet_feed	vq_min_wait_time	integer	NULL	Minimum wait time at virtual queue (e.g. 40 minutes)	No	No
vq_opsheet_feed	vq_ops_processed	char(1)	NULL	Row processed (sent to Bridge server for Master Controller), Y/N	No	No
vq_scenario_info	last_update_time	datetime year to fraction(5)	NOT NULL	Datetime when the record was last updated	No	No
vq_scenario_info	last_update_user	char(8)	NOT NULL	User ID that updated the record last	No	No
vq_scenario_info	scenario_desc	varchar(60)	NULL	Scenario description	No	No
vq_scenario_info	scenario_name	char(25)	NULL	Unique scenario name, not associated with any attraction	No	No
vq_scenario_info	vq_scenario_id	serial	NOT NULL	Unique identifier (generated by the system) for scenario information	Yes	No

TABLE IX

### Claims

1. A system for managing admission to an attraction, characterized by:

a first validator for establishing an entitlement of a customer to access the attraction;  
 a controller for generating an assigned time at which said customer may access the attraction, said assigned time comprising a next available time as determined by an algorithm performed by said system; and  
 a second validator for permitting said customer to access said attraction at said assigned time.

2. The system in accordance with Claim 1 wherein the controller unilaterally determines and issues said assigned time to said customer.

3. A system for managing admission to an attraction, characterized by:

a first queue by which customers may access the attraction by waiting in line;  
 a second queue by which customers may access the attraction in a manner which avoids the first queue;  
 a first validator for validating an entitlement of a customer to access the second queue and generating an assigned time in the future at which an entitled customer may access the attraction via the second queue.

4. The system in accordance with Claim 3, is further characterized by:

a second validator for permitting the entitled customer access to the attraction at the assigned time.

5. The system in accordance with Claims 1, 3 or 4 wherein the assigned time is determined and selected by the system.

EP 1 076 319 A1

20. The method in accordance with Claim 19 wherein said assigned time is determined and selected by a controller.
21. The method in accordance with Claim 19 or 20 including the step of issuing a media to said at least one customer if entitlement to an assigned time in the future is established.
22. The method in accordance with Claim 19, 20, or 21 including the step of assigning said times in the future in chronological order.
23. The method in accordance with Claim 19, 20, 21 or 22 including the step of displaying a next to be assigned time in the future for accessing said attraction via said at least one second queue.
24. The method in accordance with Claim 19, 20, 21, 22 or 23 wherein said assigned time is generated based upon one or more factors affecting demand for and capacity of said attraction.
25. The method in accordance with Claims 19, 20, 21, 22, 23 or 24 including the step of providing a printed pass including informational material printed thereon.
26. The method in accordance with claim 25 wherein the informational material is correlated to the location where the printed pass was printed and the time assigned.
27. The system in accordance with claims 25 or 26 wherein the informational material is generated to influence pedestrian traffic patterns.
28. The system in accordance with claims 25, 26 or 27 wherein the informational material is generated specifically for the customer based upon an identification of that customer.

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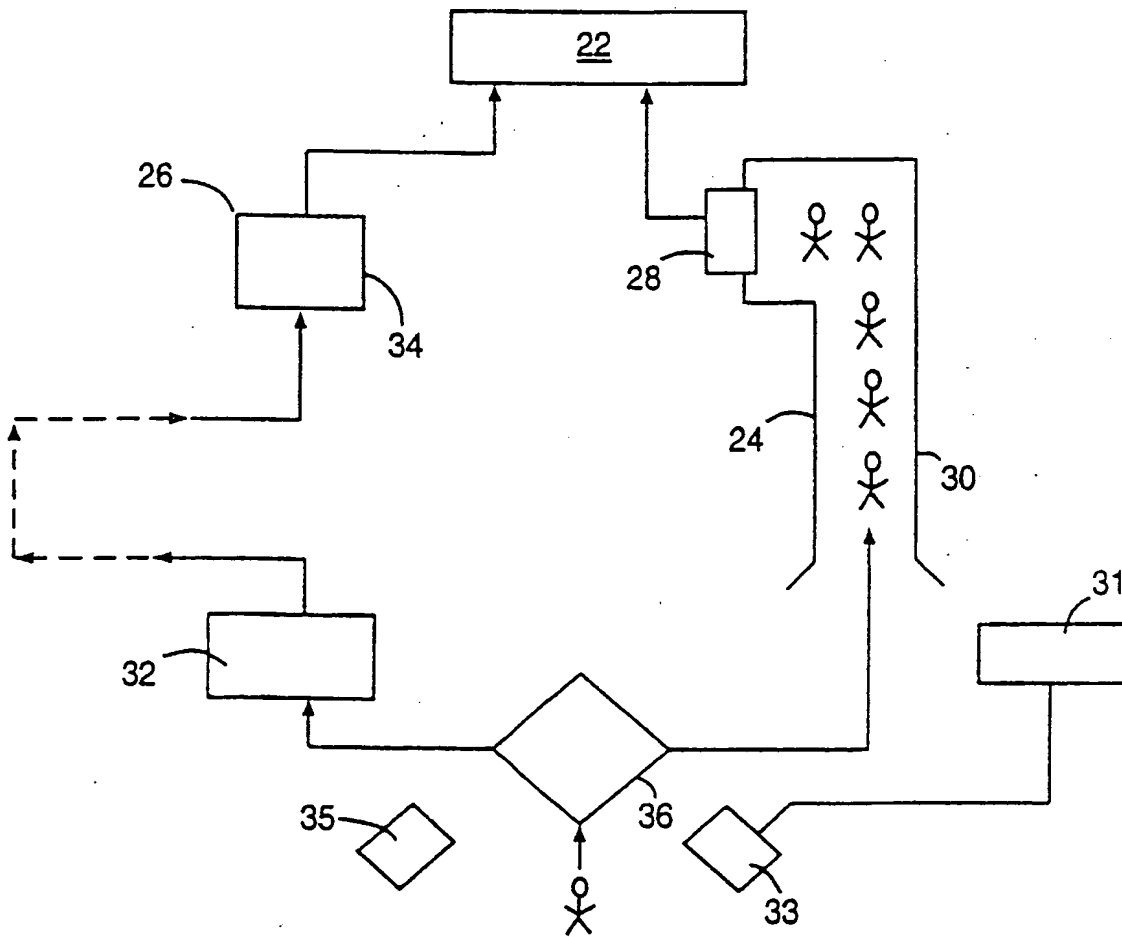


Fig. 1

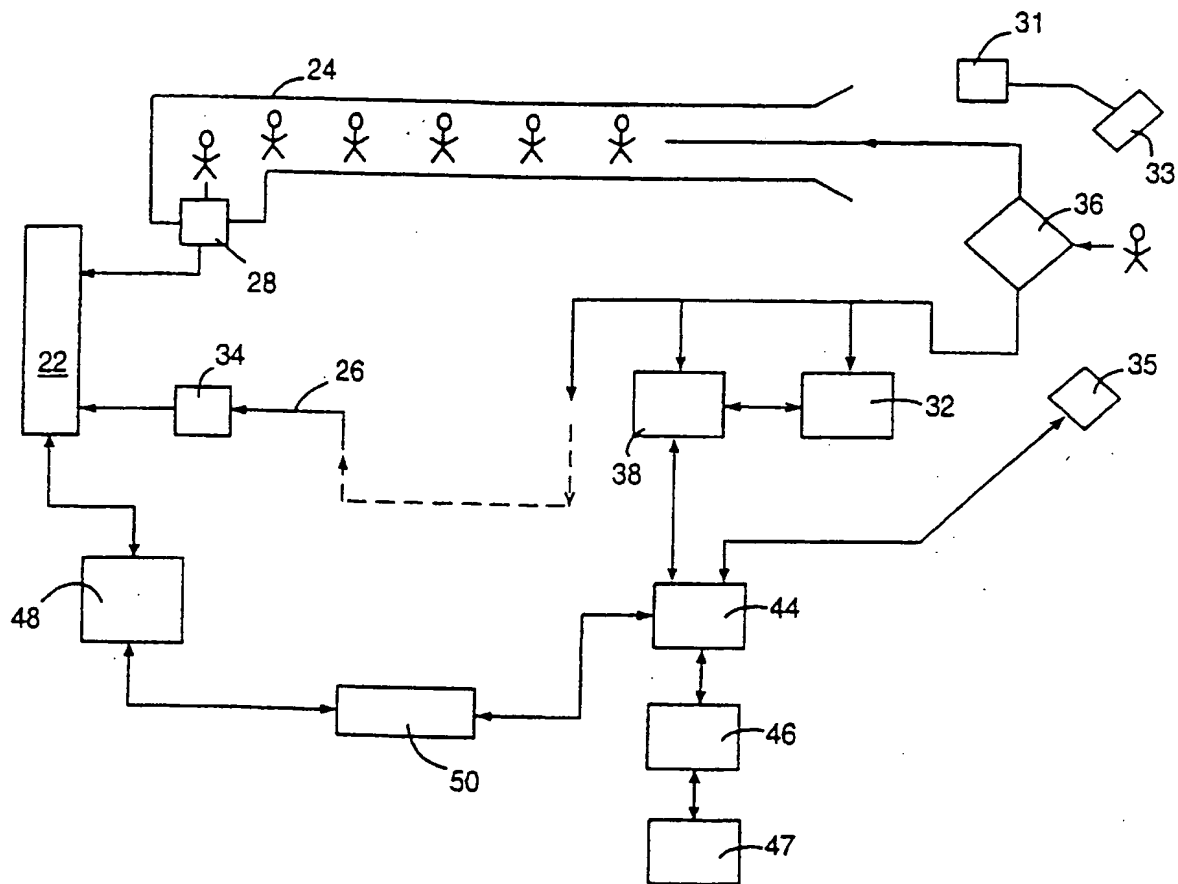


Fig. 2

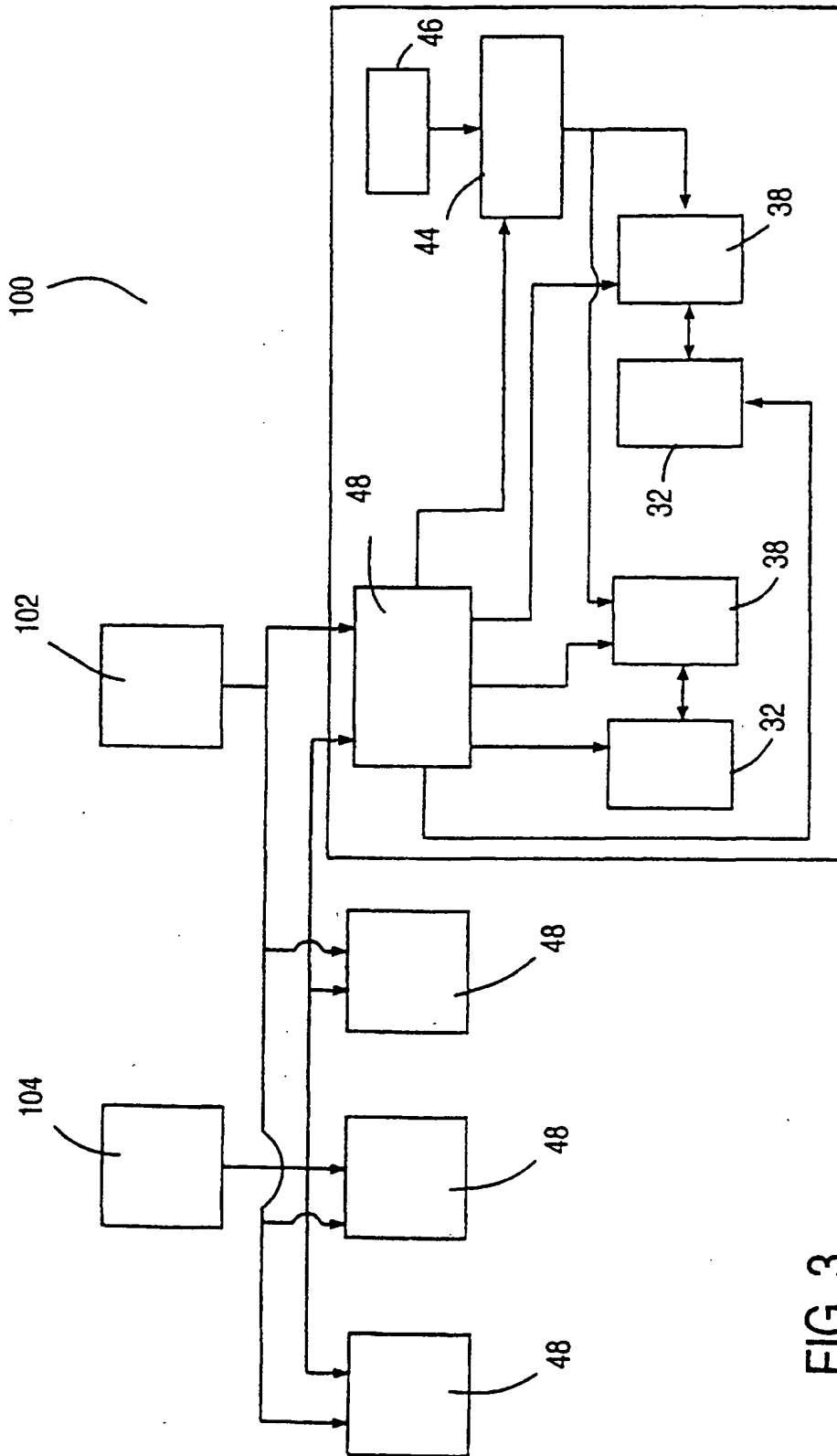


FIG. 3



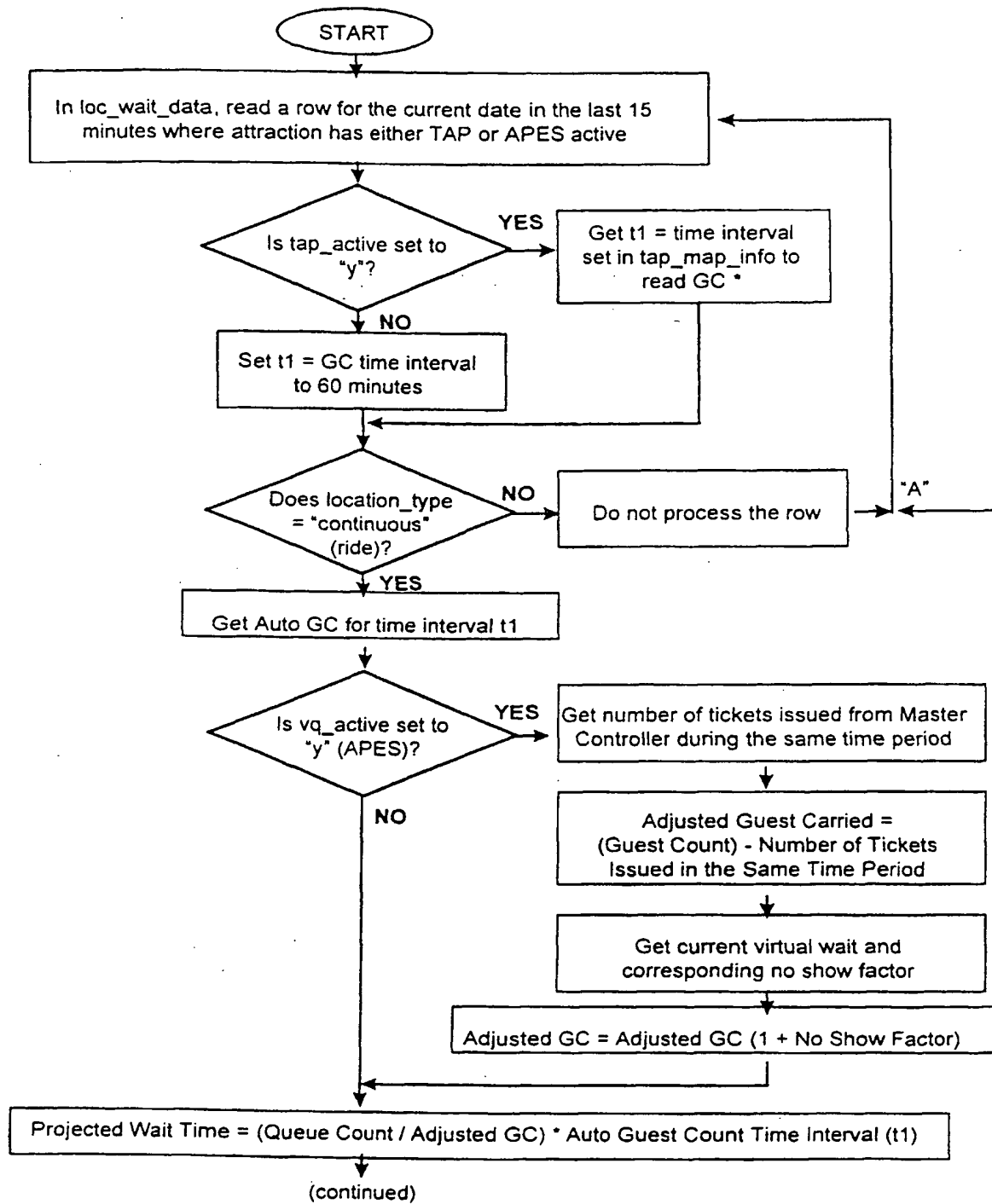


Fig. 4A

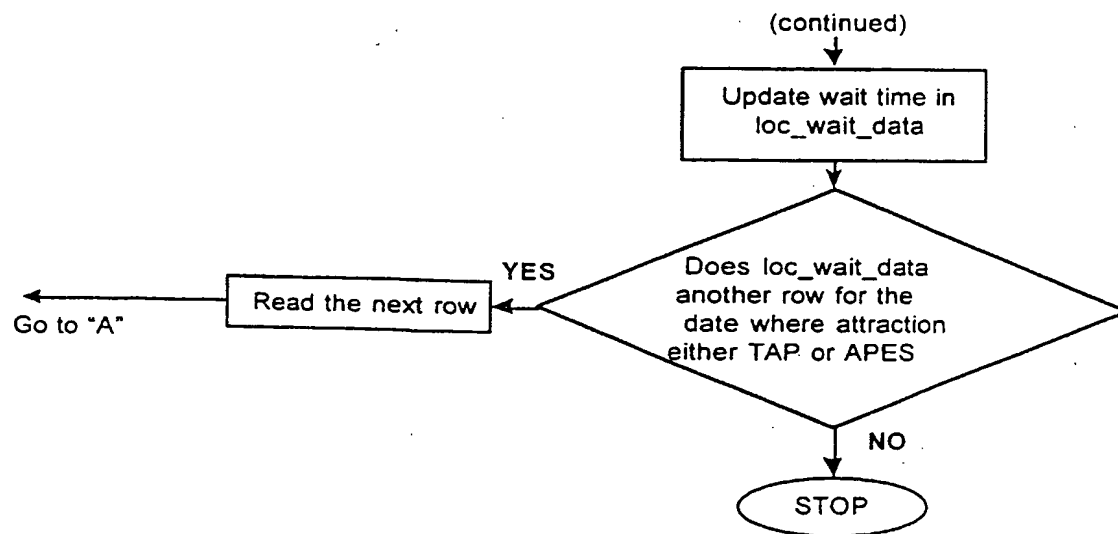


Fig. 4B

**Location Down Time**

Park:

Location:

Expected Up Time:

Current Time: 1/23/99 11:09:11

Fig. 5

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**: Wait Free Administration**

Park:  Location:

Day/Period:  Show/Location:

Time	Value 1	Value 2	Dispense Rate	Loc Utilization
08:00				

**Calendar:** April 1999

Su Mo Tu We Th Fr Sa

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

Fig. 6A

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**: Wait Free Administration**

DISNEY'S ANIMAL KINGDOM WILDLIFE EXPRESS - CONSERVATION STATION

Loc Port Id	Ho Show Id	Drime Minutes To	Drime Minutes To	Koshaw Factor Port	1st Update User
2	1	30		10	DDJ1
2	2	31	60	15	DDJ1
2	3	61	200	18	DDJ1

Fig.6B

**: Wait Free Administration**

DISNEY'S ANIMAL KINGDOM WILDLIFE EXPRESS - CONSERVATION STATION

Loc Port Id	Ho Show Id	Drime Minutes To	Drime Minutes To	Koshaw Factor Port	1st Update User
2	1	1/26/99	5/1/99	10:20	

Fig. 6C

[illegible]

Fig. 7

**Location Port Information**

Port	Address	Location	Port	Server Name
2	AK	01	WILDLIFE EXPRESS - CONSERVATION STATION	DISNEY'S ANIMAL KINGDOM
<p> <input type="checkbox"/> <b>AK</b> <input type="checkbox"/> <b>01</b> <input type="checkbox"/> <b>WILDLIFE EXPRESS - CONSERVATION STATION</b> <input type="checkbox"/> <b>DISNEY'S ANIMAL KINGDOM</b> <input type="checkbox"/> <b>ctxserver</b> </p>				

Location Name	WE - Cons S	Minutes before closing	40
Location	DISNEY'S ANIMAL KINGDOM	Minutes before closing	10
Server	ctxserver	Minutes before closing	1800
AK		Minutes before closing	2400
ctx		Minutes before closing	15
		Minutes before closing	80
		Minutes before closing	75

Fig. 8

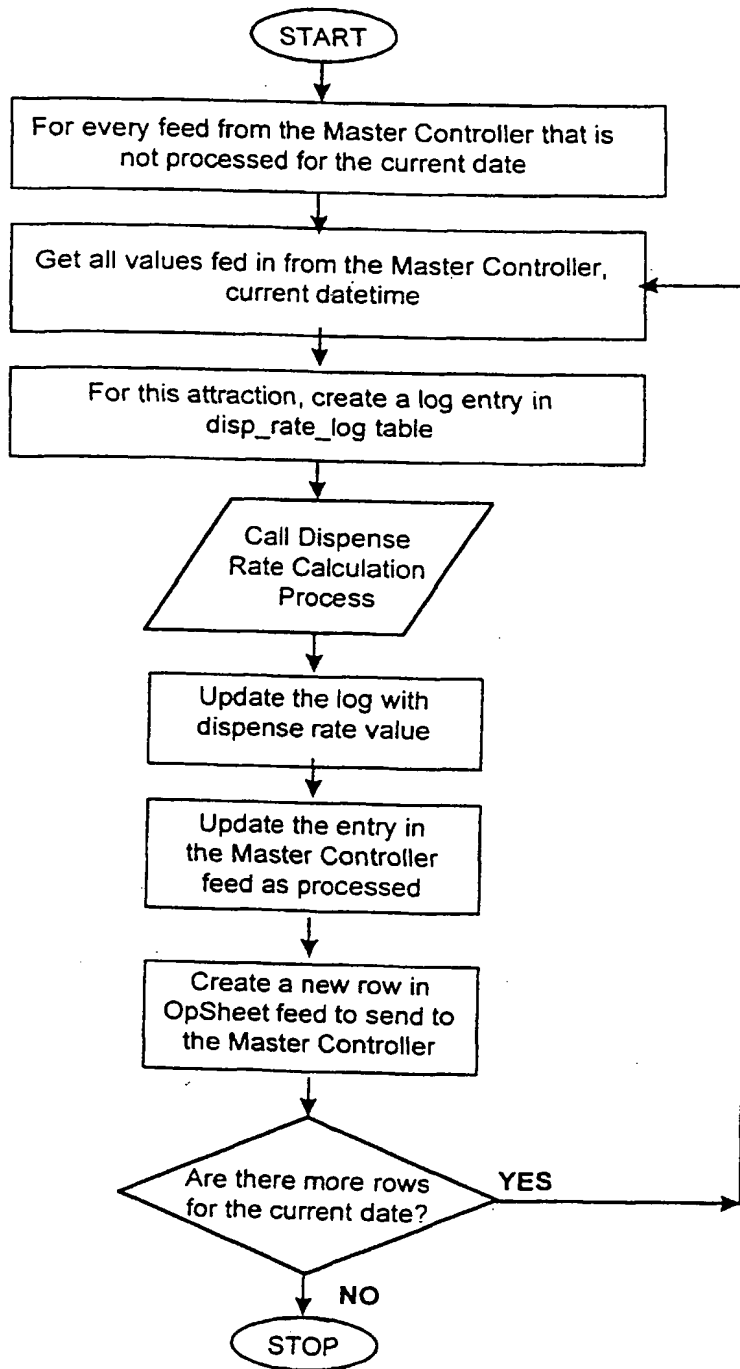


Fig. 9



## Master Controller Feed to Master Server

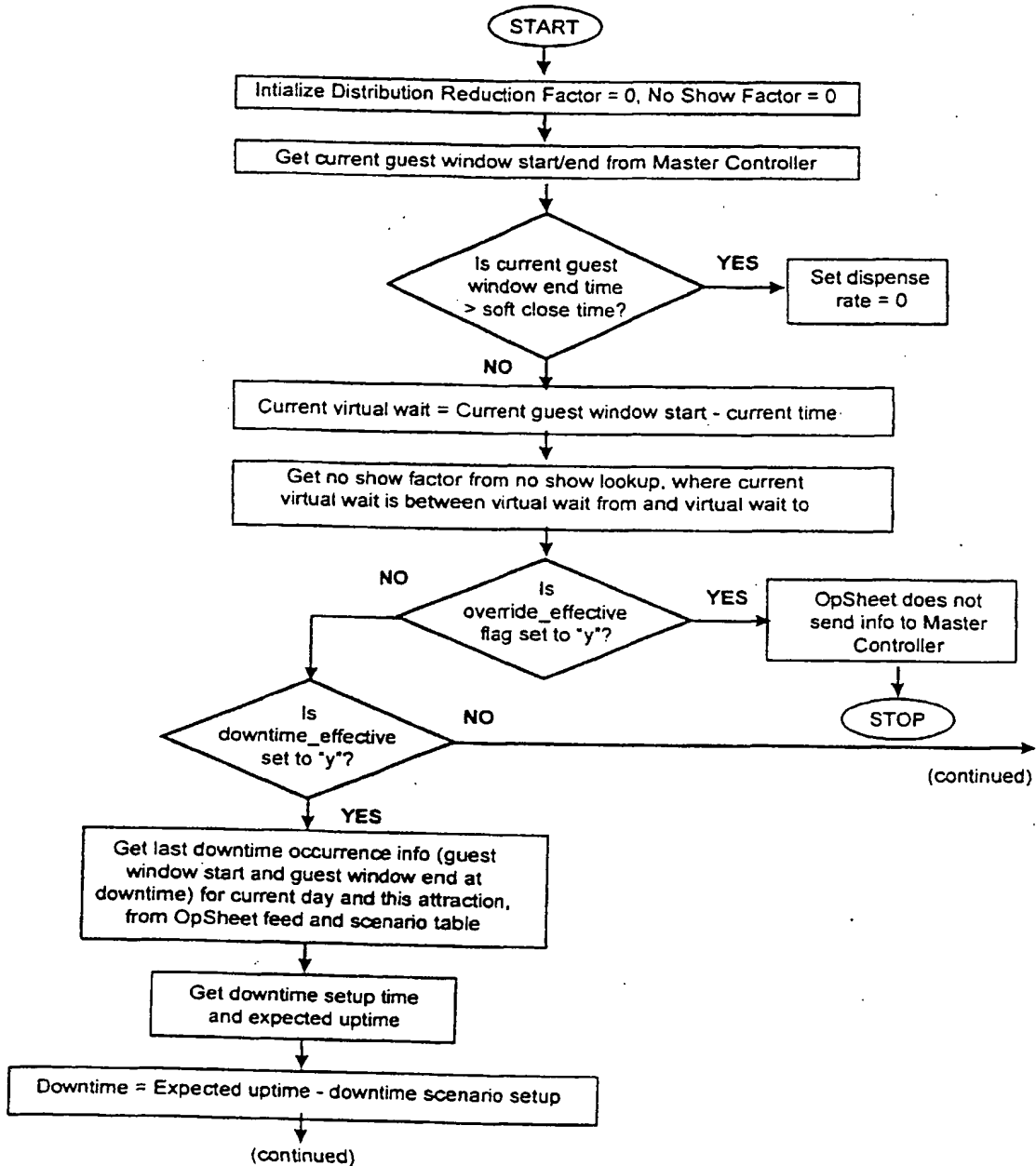


Fig. 10A

## Master Controller Feed to Master Server

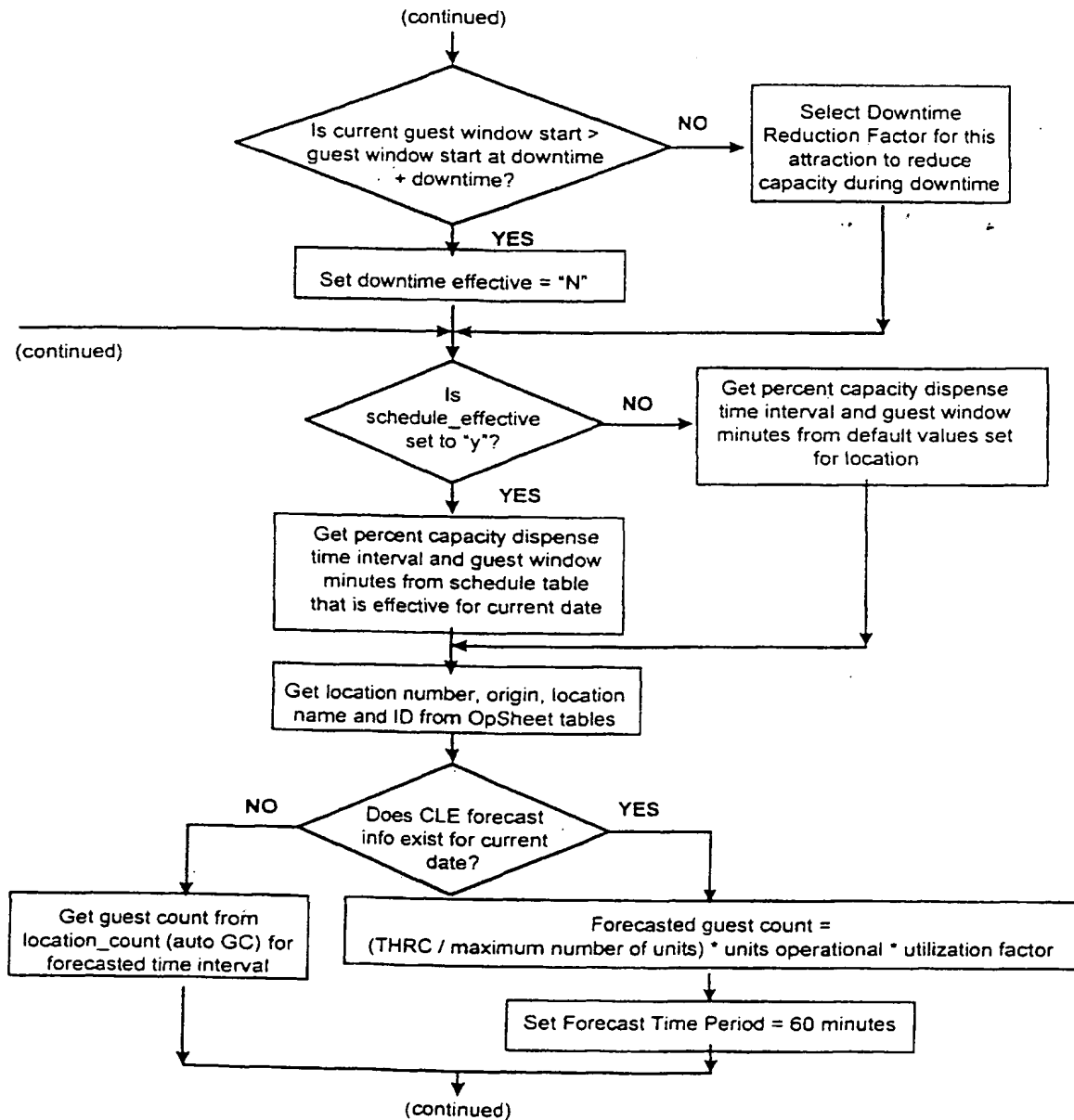


Fig. 10B

**Master Controller Feed to Master Server**

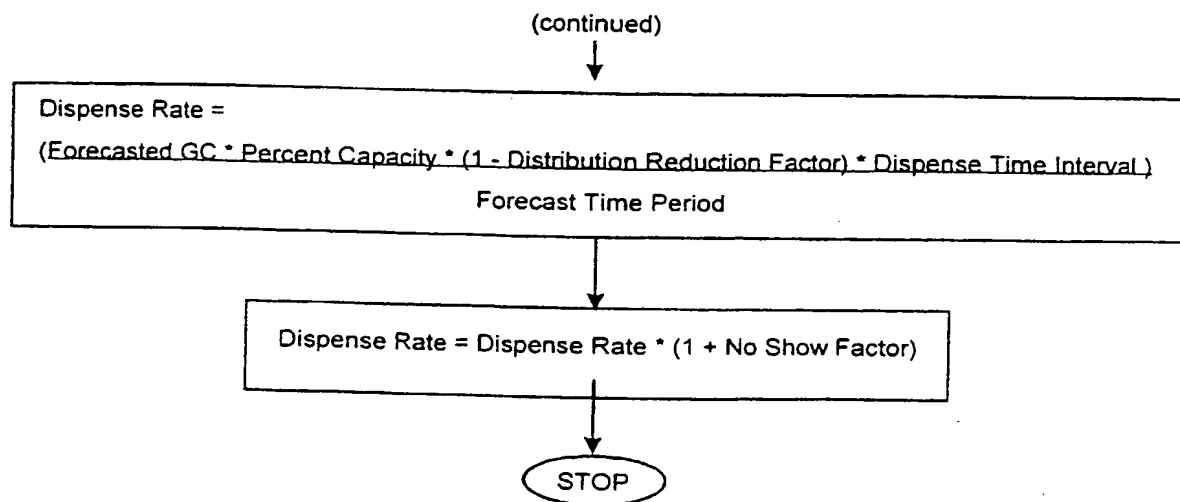
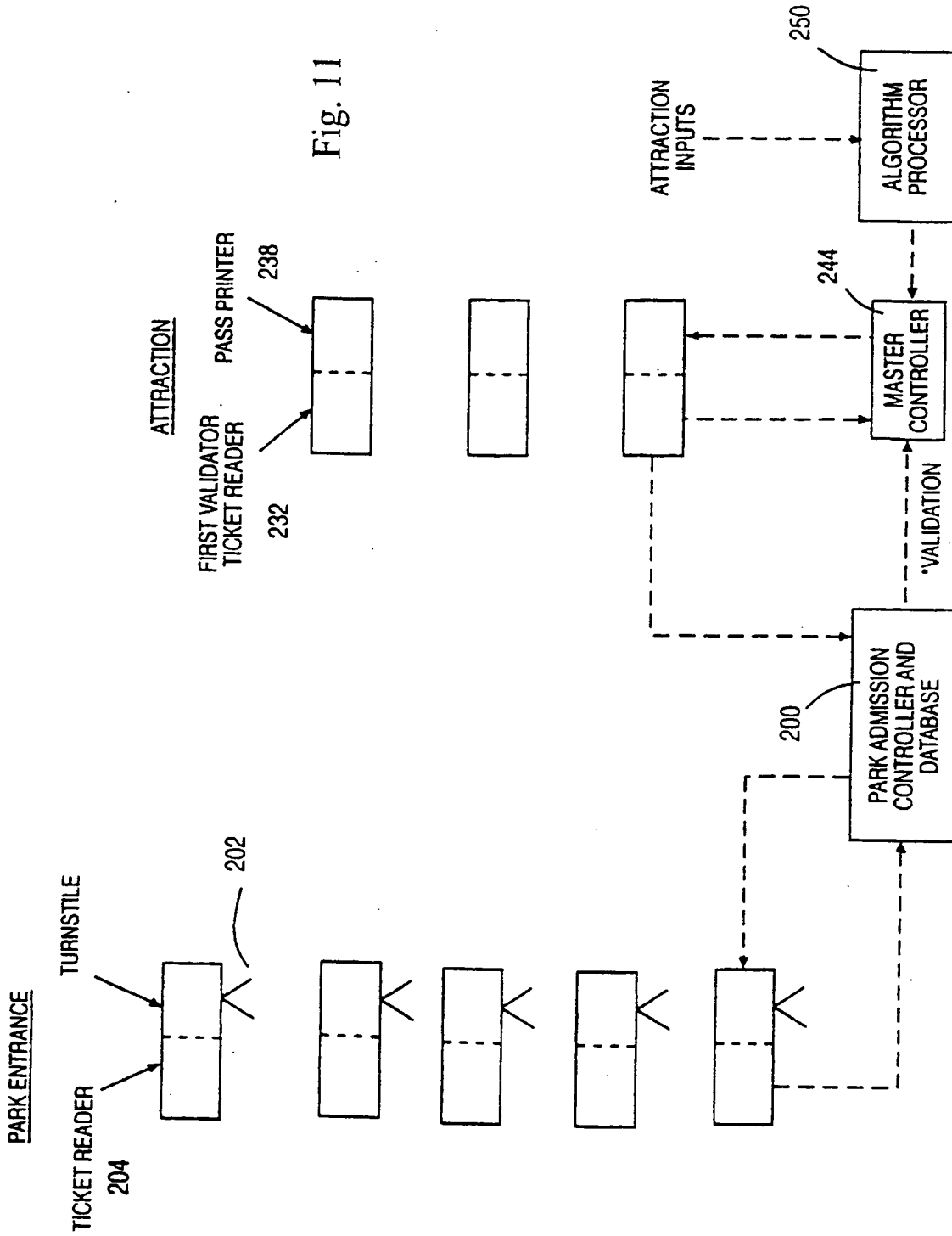


Fig. 10C



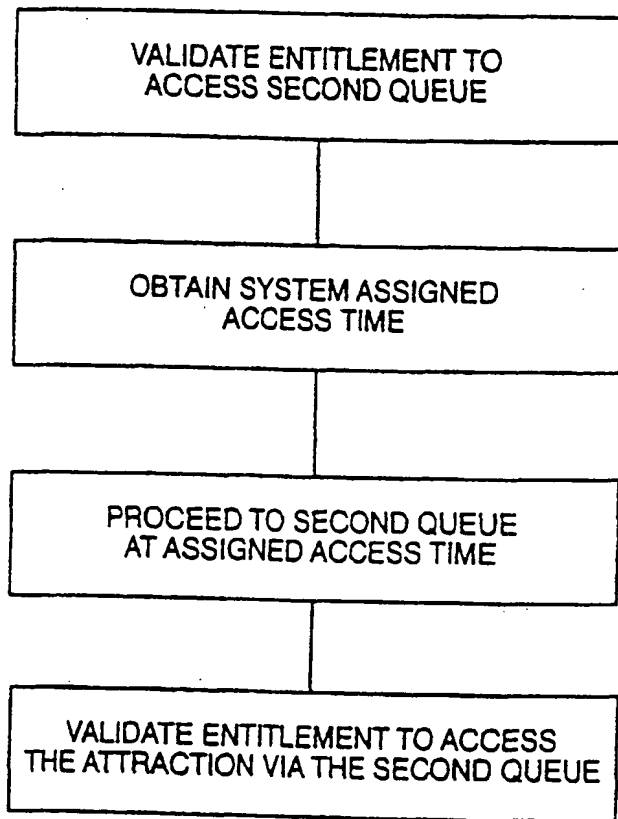
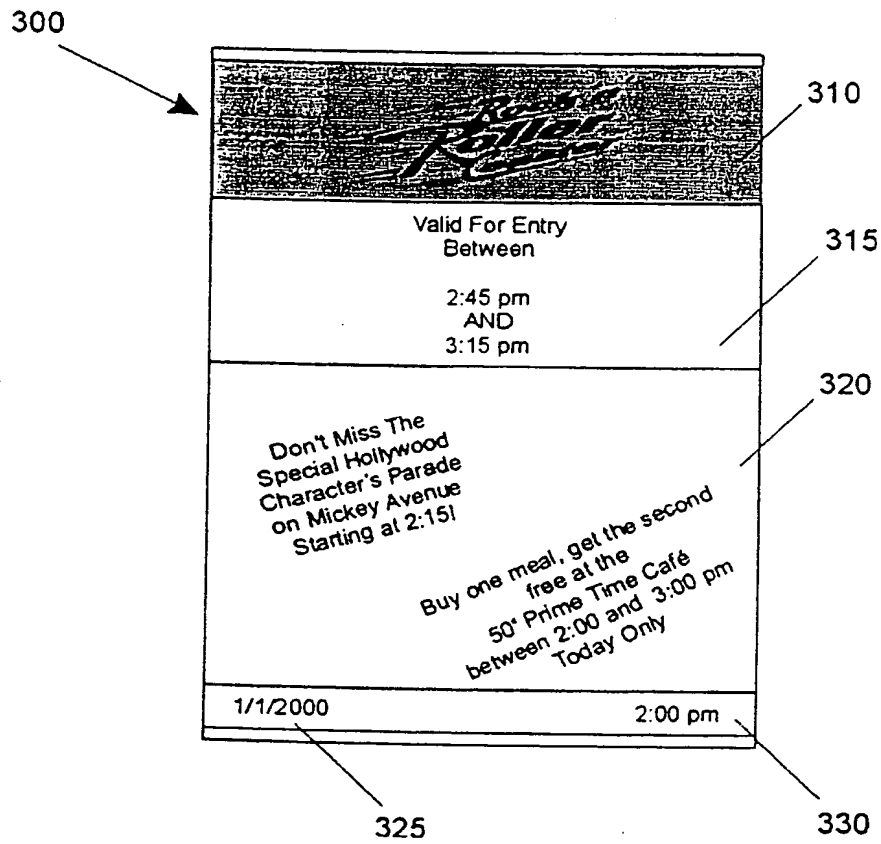


Fig. 12



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Fig. 13



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# EUROPEAN SEARCH REPORT

Application Number  
EP 00 11 6733

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. CL.7)
X	GB 2 307 324 A (SIM LEONARD) 21 May 1997 (1997-05-21)  * abstract; figures * * page 13, line 19 - page 15, line 14 * * page 17, line 14 - page 19, line 7 * * page 20, line 13 - page 23, line 13 *	1, 3-10, 12-14, 19-22, 24	G07C11/00 G06F17/60
Y		11, 15-18, 23, 25-28	
X	GB 2 228 123 A (EDDISON SIMON PETER; SMITH ROBERT NIGEL) 15 August 1990 (1990-08-15) * abstract; figures * * page 4, line 13 - page 5, line 23 * * page 5, line 31 - page 6, line 16 * * page 8, line 28 - page 9, line 8 * * page 9, line 25 - page 12, line 6 *	1, 2	
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X	PATENT ABSTRACTS OF JAPAN vol. 013, no. 387 (P-924), 28 August 1989 (1989-08-28) & JP 01 134565 A (TOKICO LTD), 26 May 1989 (1989-05-26) * abstract *	1	
A		4-12, 14-16, 20-22, 25, 26	
-/-			
The present search report has been drawn up for all claims			
Place of search <b>THE HAGUE</b>		Date of completion of the search <b>5 September 2000</b>	Examiner <b>Buron, E</b>
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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# EUROPEAN SEARCH REPORT

Application Number  
EP 00 11 6733

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (InCL7)
A	PATENT ABSTRACTS OF JAPAN vol. 1997, no. 03, 31 March 1997 (1997-03-31) & JP 08 315188 A (HITACHI LTD), 29 November 1996 (1996-11-29) * abstract *	1,4-12, 14-16, 20-26	
			TECHNICAL FIELDS SEARCHED (InCL7)
The present search report has been drawn up for all claims			
Place of search <b>THE HAGUE</b>		Date of completion of the search <b>5 September 2000</b>	Examiner <b>Buron, E</b>
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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EP 00 11 6733

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on  
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05-09-2000

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US 5502806	A	26-03-1996	NONE	
JP 01134565	A	26-05-1989	NONE	
JP 08315188	A	29-11-1996	NONE	

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